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Do flexible work policies improve parent's health? A natural experiment based on the UK Millennium Cohort Study

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What is already known on this subject?

Studies suggest that maternity leave policies have positive effects on family health. However, there is limited evidence on the impact of other family-work balance policies, such as policies that grant employees flexibility to reconcile work and family roles, on the health of mothers.

What this study adds?

This study shows that the UK Flexible Work Act in 2003, a "light-touch" legislation that granted working parents the right to request flexibility in their jobs arrangements (without enshrining their right to have such arrangements), increased the take up of flexible work arrangements among working mothers but had not impact on maternal health or well-being.

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Abstract

Background: There is limited evidence of the impact of policies to promote work-family balance on family health. Exploiting the introduction of the UK Flexible Working Act (2003), we examined whether a policy that grants parents *the right to request* flexible work influences their health and well-being.

Methods: Using the UK Millennium Cohort Study, we focus on 6,424 mothers employed in 2001-2, when the cohort child was 9 months old, until their child's 7th birthday. We used a difference-in-differences (DiD) approach to compare changes in outcomes before and after the policy among mothers most likely to benefit and mothers unlikely to benefit from the policy.

Results: Flexible working increased in a small group of mothers (n=548) whose employer did not offer work flexibility before the reform (treatment group). By contrast, among mothers whose employer already offered flexible work before the reform (control group, n=5,810), there was little change or a slight decline in flexible working. DiD estimates suggest that the policy was associated with an increase in flexible working (37.5%, 95% Confidence Interval (95%CI) 32.9, 41.6), but it had no impact on self-rated health (-1.6%, 95%CI (-4.4, 1.1), long-term illness (-1.87%, 95%CI -4.3, 0.5) or life satisfaction scores ($\beta = 0.04$, 95%CI -0.08, 0.16).

Conclusion: The Flexible Working Act increased flexible working only among a small group of mothers who had not yet the right to request work flexibility, but it had no impact on their health and well-being. Policies to promote work flexibility may require stronger incentives for both parents and employers.

INTRODUCTION

Over the last decades, reconciliation of work and family life has become a key concern of Government policy.[1, 2] In the UK, 63% of mothers and 89% of fathers aged 25-34 are in the labour force,[3] but many of these parents experience difficulties in balancing work and family life.[4] Studies have shown that parents reporting greater work–family conflicts are more likely to take sick leave and have lower mental wellbeing,[5, 6] particularly women.[7] In response, a growing literature emphasises the benefits of policies that support parents after the birth of a child, particularly maternity leave, for family health and well-being.[4, 8-11] Yet there is limited evidence of the impact of family-work policies in the period after maternity leave, and during the critical first five years of children's lives.

The International Labour Organization's Workers with Family Responsibilities Convention of 1981 recommended the expansion of policies that provide parents the opportunity to access flexible work arrangements. Work flexibility may not only help increase employment rates among parents, but it may also improve the health and well-being of parents who must meet the demands of work and family, a burden disproportionally born by women.[2] How to provide parents with flexible work arrangements, however, remains controversial, ranging from a formal offer to all employees to informal negotiations between employer and employee. In the UK, common flexible work arrangements include part-time work, home working, job sharing, compressed hours, staggered start and end times, working around school-term times, and career breaks.[12]

A few studies have examined whether flexible work is associated with better parental health and well-being.[13-15] These studies generally report either positive or null effects on worker's health. For example, Glass and Finlay's (2002) study of companies operating flexible work arrangements reported improved mental and physical health. A systematic review of 10 studies found that "self-scheduling of shifts" improved outcomes such as blood pressure, mental health, and self-rated health.[16] However, normative arrangements such as part-time work can be more problematic: part time work is linked to lower lifetime earnings and increased job insecurity, particularly among less educated women.[17] Most of these studies have focused on specific industries or companies, but there is limited evidence of the impact of national legislation facilitating work flexibility on the well-being of working parents.

In 2003, the United Kingdom passed the Flexible Working Act, which provided employees with children under six or disabled children under eighteen with the 'right to request' flexible working patterns. Provisions were extended in 2007 to include employees with any caregiving responsibilities, and were further extended to all employees in 2014. The policy does not oblige employers to grant requests, but to consider employees' requests, stipulating a variety of working practices.[18, 19] Despite enthusiasm for this policy, existing evaluations suggest that while there has been a slight increase in the availability of flexible working arrangements, there has been little change in the use of such arrangements by parents.[15, 20] For example, the proportion of all employees working flexibly increased from 51% in 2000, to 56% in 2006 and 60% in 2011.[21] However, these changes may just reflect secular trends or conceal changes among selected parents that had no access to flexible work prior to the reform. These trends, therefore, do not necessarily reflect the true impact of the legislation.

This paper examines the impact of the Flexible Working Act on the health and well-being of working mothers in the UK. The enactment of this policy serves as a natural experiment to examine how legislation that increases the right of working parents to request flexible work may impact their health and well-being. We use longitudinal data that follows parents for over

six years and identify a potential treated and control group to measure the impact of work flexibility legislation.

DATA AND METHODS

The Millennium Cohort Study

Our analysis is based on the Millennium Cohort Study (MCS), a nationally representative study of 19,489 children.[22] A random two-stage sample of infants born between September 2000 and January 2002 and resident in the UK at 9 months was drawn from Child Benefit Registers (response rate 72%).[22] Baseline interviews at 9 months in 2001-2 were followed by assessments at 3, 5, 7 and 11 years (carried out in 2004, 2006, 2009 and 2011, respectively). Data were primarily collected through interviews at home with the main carer, usually the mother. The study collects assessments across a variety of domains including parenting; socio-emotional development; child and parental health; parents' employment and education; income; housing and neighbourhood characteristics.[23]

We focus on mothers for two reasons. First, women disproportionately bear the burden of combining family and work responsibilities, and are considerably more likely to take up flexible work arrangements than men. In our sample, the weighted proportion of working partners using flexible work arrangements when their child was 7 years old was 18%, compared to over 60% among working mothers. In addition, questions about flexible work in the first wave of data collection were only asked to the primary care giver, which in 98% of families was the mother.

From 19,489 mothers at baseline, we selected 15,916 mothers who were also interviewed in at least one subsequent wave, as longitudinal assessments were required to examine change in outcomes. We then selected 6,424 mothers who were working or on leave at baseline (excluding 110 self-employed).

Parental outcome measures

We focus on health measures assessed consistently between baseline and at least one follow-up assessment:

Limiting longstanding illness. At each wave, respondents were asked whether they had a longstanding illness, disability or infirmity that limited their daily activities. This is a measure of functional limitation which has been found to be a valid measure of adult health.[24]

Life-satisfaction scores. Respondents were asked to report in a scale from 1 to 10 how satisfied they were with their lives, as measure of well-being.

Parental general health. This was assessed based on the Short Form 8 (SF-8), a validated scale [25] that assessed multiple health dimensions including self-rated health, difficulty with doing work, pain, and emotional problems. In model estimations, we used only the first two waves of data because of a change in the wording of the question in the following waves.

Flexible working arrangement measures

In 2001-2002, before the reform was enacted, parents were asked to report whether their employer offered any of the following flexible work arrangements: part-time working, job–sharing, flexi-time, home working, special shifts (e.g. evening, school hours), 9-day fortnights/4-day working weeks (for full-time workers), or school term-time contracts. Respondents reporting that their employer offered at any of these arrangements were then asked whether they used such arrangements. From 2004 to 2009, all parents were asked

whether they used any of the arrangements above. In addition, in all waves, parents were asked to report how many hours they usually worked. We used this to define part-time work as working less than 30 hours per week.

Analytical Approach

In order to isolate the impact of the policy on health and well-being outcomes, we used a difference-in-differences (DiD) approach. This is a quasi-experimental technique that identifies the effect of a policy by comparing the change over time in the outcome for a pre-defined 'treatment group', to the change in the outcome in a 'control group'. Having a control group enables isolating the effect of the policy as it offers a counterfactual of the change in health that would have occurred in the treatment group had they not benefited from the policy.

One approach would be to examine how changes in the use of flexible work relate to changes in health and well-being. However, this approach would be susceptible to bias by reverse causality, as we do not know the precise timing of health changes and whether they occurred before or after the reform. Therefore, we exploit baseline information on employer's offer of flexible work, as this is unlikely to be affected by respondent's own health status. We defined the treatment group as mothers whose employer did not offer any flexible arrangement prior to the introduction of the policy. These mothers were likely to have benefitted the most from the policy. As controls, we selected parents who reported that their employer already offered flexible work arrangements prior to the policy. These parents were less likely to have benefited from the legislation, as they already had access to flexible work. Our DiD approach attempts to control for pre-existing differences between these two groups by examining the difference in the *change* in parental outcomes before and after the reform, rather than directly comparing the health of the two groups after the reform. The assumption is that health trends in the treatment group would have been similar to those in the control had they not being exposed to the policy.

Ordinary Least Square (OLS) linear probability models were used to regress health outcomes on an indicator which took the value 1 for mothers in the treatment group and 0 for the controls, and a policy indicator variable that took the value of 0 for the period before the reform (2001/2) and 1 for the periods after the reform (2003, 2006 and 2008). An interaction term between these two variables represents the DiD estimate and can be interpreted as the absolute difference in the trend in the outcome between treated and control. Models incorporated an extensive set of controls, including changes in mother's age, marital status and occupational class, as well as partner's work status, partner's educational level, partner's use of flexible work arrangements, number of siblings at each wave, and whether partner worked full- or part-time.

In all analyses, appropriate survey weights were used to account for sampling design and attrition. Descriptive analyses were carried out using SAS version 9.1, while STATA version 8 was used to implement models using robust standard errors clustered at the individual level.

RESULTS

Table 1 summarises sample characteristics. The first column shows that prior to the reform, 5,810 mothers were already offered some type of flexible work (the control group), while 548 mothers were not offered flexible work (the treatment group). Mothers whose employer offered flexible work arrangements were older, had higher education, and they were more likely to be white, married, and have a partner in a higher professional occupation. Column 2

shows that, at baseline, sample characteristics were similar for users and non-users of flexible work. By wave 2 (column 3), however, users of flexible work were more likely than non-users to be white, married, hold higher occupations and to report two or more siblings. There was a larger fraction of mothers who were not in employment in wave 2, and who therefore did not report using flexible work. Figure 1 shows that the majority of mothers reported their employer already offered flexible working prior to the reform, but this varied for each specific work flexibility arrangement, ranging from 84-88% for part-time work to 2-7% for 9-day fortnights/4-day working weeks. Job sharing, flexi-time, home working and 9-day fortnights/4-day working weeks were more often offered and used by professional workers; by contrast, routine workers were more likely to work part-time, do special shifts and use school-term contracts.

Among mothers who did not have an employer who offered flexible work before the reform (treatment group), there was an increase in the use of all flexible arrangements between 2001-2 and the years post-reform, particularly for part-time and flexi-time (Figure 2). By contrast, among mothers whose employer already offered flexible work before the reform (control group), there was little change or a slight decline in flexible working. Estimates of the interaction between treatment status and time, the DiD estimate, are summarised in Table 2. Results from the first column confirm that the policy was associated with a large increase in the percentage of mothers reporting using of at least one form of flexible work (37 percentage point increase, 95% Confidence Interval [95%CI 32.9, 41.6]). The magnitude of this effect ranged from an increase of 8 percentage points (95%CI 3.3, 12.2) for working 9-day fortnights/4-day weeks, to 32 percentage points (95%CI 29.9, 35.0) for flexi-time. This suggests that mothers in the treatment group, although a small sample, had a significantly larger increase in the use of flexible work after the policy than mothers who already enjoyed the right to flexible work.

We now turn to evaluate the impact of the policy on health and well-being. Figure 3 shows the probability of reporting poor self-rated health and illness, as well as mean life satisfaction scores across all waves. Between 2001/2 and 2003/4, there was a slightly more favourable trend in poor self-rated health (only available for waves 1 and 2) and long-term illness in the treatment as compared to the control group, while trends in life-satisfaction were similar across treatment and control. A lack of significant difference in health and well-being trends between the two groups is confirmed in DiD model estimates summarised in columns 3 to 5 of Table 2. For none of the eight forms of flexible work led to improvements in the probability of reporting poor health or long-term illness, or life-satisfaction scores. The only exception was for special shifts: Mothers who gained the right to request this type of flexible work experienced a .12 significant improvement in life-satisfaction scores, but no change in health outcomes. There was no impact of other forms of flexible work on any of the outcomes studied.

DISCUSSION

We found some evidence that a 2003 UK policy granting working parents the right to request flexible work increased the take up of flexible work arrangements. However, these effects applied only to a small group of mothers who did not have this right before the policy, and they had no discernible effect on the health and well-being of working mothers. Our results suggest that "light-touch" legislation that grants working parents the right to request work flexibility (but does not guarantee their right to such arrangements) has limited impacts on parental health and well-being.

Several explanations might account for the relatively weak effects on health and well-being. The policy may have provided a framework to process requests for flexible work, but it may

have done little to change attitudes of employers. Recent evidence suggests that attitudes towards flexible work may be more important for working parents' well-being than the offer of these arrangements per se. For example, a study in Sweden found no effect of availability of flexible arrangements but a strong effect of positive attitudes to parenthood at work on mothers' stress and wellbeing.[26] Cultural support for flexible working and the attitudes of managers are critical in facilitating the uptake of formal schemes.[15] Although we had not data on whether mothers were granted their request to work flexibly prior to the reform or at wave 2, data for waves 3 and 4 suggest that about 90% of mothers who requested flexible work were granted their request. However, recent studies suggest that, in 2013, 38% of working mothers with a young child reported that they wished to work flexibly, but they did not request it for fear of being viewed negatively by their employer or harming their career.[27] Indeed, 51% of mothers said they were treated unfavourably after an approved request of flexible working.[27]

Another explanation is that the legislation was not firm enough to guarantee a significant impact on employees' uptake. Often labelled as a 'light-touch legislative duty', the legislation required employers to simply consider requests for flexible work. The law leaves the decision to grant requests to employers, providing limited rights for appeal to employees whose requests are not granted. As a result, earlier evaluations of the policy [28] suggest that it had relatively weak effects on uptake of flexible work. In addition, most mothers in our sample reported that they already had the right to request at least one form of flexible work, suggesting that the policy represented only a marginal improvement for most working mothers.

Our findings suggest that more aggressive policies might be required to achieve impact. For example, the Netherlands introduced a policy in 2001 which obliged most employers to grant requests for a change in working hours.[2] In addition, the Dutch Government introduced parental leave offering up to 75% salary compensation to employees during the first five years of their child life, an offer taken up by 19% of fathers in 2005.[29] Thus, a possible hypothesis is that a lack mandatory requirements for UK employers to grant requests, combined with a lack of financial incentives for both employers and employees, led to limited effects on uptake. In fact, employees requesting reduced hours would have seen a loss of salary income if the request was granted, as no compensation for reduced hours was in place.

Methodological considerations

Our study adds to a literature often based on small, industry-based samples of workers. However, several limitations should be considered. We used employers' offer of flexible work in our models, rather than parents' use of flexible work, and exploit a change in a national policy to minimise selection and confounding. However, a key concern is self-selection into treatment and control. For example, parents who want work flexibility may seek employers that are more open to family-friendly policies. This relates to a key requirement for the validity of the DiD approach, the common trend assumption, requiring that both groups have a common trend – that the change in outcomes in the control group is a good counterfactual of what we would have observed in the treated had they not been exposed to the policy. Unfortunately, we had no data prior to 2001, and we were therefore unable to examine trends in flexible work and health prior to the policy.

Furthermore, loss to follow-up in the Millennium Cohort Study is greater in households from more disadvantaged backgrounds, which is linked to higher risk of poor parental outcomes. We therefore may underestimate the relationship between flexible work and parental outcomes. Finally, all our measures were self-reported, and parents may not be completely aware of the range of flexible work arrangements their employer offers. Arguably however, such lack of knowledge might reflect the culture and management style of their workplace.

Conclusions

Flexible work policy is increasingly championed as an important tool to help families achieve better work-life balance, as well as promote parental employment and gender equality. However, a 'light-touch' policy that grants parents the right to request flexible work arrangements has a limited impact on the adoption of work flexibility, and the health and well-being of mothers. Policies to promote work flexibility may thus require stronger incentives for both parents and employers.

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Table 1. Descriptive characteristics by whether employer offered at least one form of flexible work at baseline and whether mother used at least one form of flexible work in waves 1 (2001/2002) and wave 2 (2004)

	Employer Offered flexible work at baseline				Mother's use of flexible work							
	Wave 1 (baseline)				Wave 1 (baseline)				Wave 2 (2004)			
	No		Yes		No		Yes		No		Yes	
	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
N	100	548	100	5,810	100	1,372	100	4,986	100	1,899	100	4,425
Age												
15-24	20.3	116	11.4	768	11.8	196	13.1	688	10.3	197	5.6	263
25-29	28.9	154	24.5	1452	25.1	347	23.8	1259	21.1	404	14.9	677
30-34	33.7	186	39.4	2210	39.1	502	38.3	1894	33.7	642	37.5	1639
35-39	13.9	77	20.9	1153	20.3	274	21.0	956	27.0	498	31.2	1376
40-44	2.6	13	3.5	213	3.4	50	3.5	176	7.0	140	9.7	428
45+	0.7	2	0.2	13	0.3	3	0.2	12	0.9	18	1.0	42
Mother's educational level												
NVQ level 1-2	42.2	230	32.5	1902	34.1	414	29.2	1718	36.0	675	33.6	1449
NVQ level 3	17.6	93	16.1	993	16.4	218	15.5	868	18.0	353	15.7	725
NVQ level 4	29.2	155	42.0	2311	40.2	585	44.8	1881	34.5	645	41.2	1795
NVQ level 5	2.7	15	5.3	316	5.0	82	6.0	249	3.7	77	5.5	253
Other	8.3	55	4.1	287	4.3	73	4.5	269	7.9	146	4.0	203
Partner's educational level												

NVQ level 1-2	33.1	170	28.7	1651	29.6	370	26.6	1451	29.0	556	28.9	1254
NVQ level 3	10.8	60	15.0	857	15.0	184	13.2	733	12.2	238	15.2	673
NVQ level 4	19.7	102	30.8	1665	29.8	391	31.1	1376	25.7	458	29.9	1293
NVQ level 5	3.6	18	6.1	325	6.0	74	6.0	269	4.9	92	6.0	251
Other	12.6	69	6.5	421	6.6	123	8.7	367	9.4	183	6.1	305
No partner	20.3	128	12.8	886	13.1	227	14.5	787	18.8	370	14.0	645
Mother's ethnicity												
White	90.4	487	94.4	5408	94.8	1236	91.2	4659	92.4	1725	94.0	4137
Non-White	9.6	61	5.6	402	5.2	136	8.8	327	7.6	174	6.0	288
Partner's ethnicity												
White	73.4	381	82.3	4603	78.4	1043	78.4	3941	71.0	1321	78.1	3413
Non-white	6.2	38	4.9	318	7.2	104	7.2	252	5.5	120	4.4	212
Missing	12.2	77	7.0	477	6.0	100	7.4	429	10.8	215	9.0	421
No partner	8.1	52	5.8	412	8.3	125	5.8	364	12.7	243	8.5	379
Marital status												
Married, 1st marriage	59.8	316	65.5	3782	65.5	871	63.2	3227	64.5	1234	70.2	3119
Married, 2nd or later marriage	2.4	12	5.4	290	5.3	59	4.5	243	5.5	100	6.4	275
Single, never married	31.9	184	23.1	1400	23.3	359	25.3	1225	23.6	450	18.0	788
Separated, divorced or widowed	5.9	36	6.1	338	5.9	83	7.0	291	6.4	115	5.4	243
Own occupation												
Higher professional	59.0	307	69.4	3905	66.5	1018	77.9	3194	28.3	588	71.9	3132
Lower routine	39.0	23	29.8	1854	32.7	339	21.1	1748	7.3	167	27.3	1255

		3										
Self-employed or small employer	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Not applicable	2.0	8	0.8	51	0.8	15	1.0	44	64.3	1144	0.7	38
Partner's occupation												
		16										
Higher professional	34.7	7	48.5	2569	47.9	571	45.9	2165	36.7	647	44.3	1835
		20										
Lower routine	37.5	0	28.1	1756	28.6	428	29.7	1528	24.5	492	22.7	1071
Self-employed or small employer	6.3	45	9.6	540	9.5	127	8.8	458	9.2	168	10.2	448
		13										
Not applicable	21.5	6	13.8	945	14.0	246	15.6	835	29.7	592	22.7	1071
Number of siblings												
		30										
One	54.6	3	48.9	2,841	60.7	818	46.6	2,326	25.6	523	30.9	1,363
		16										
Two	31.1	3	36.8	2,103	29.6	411	38.0	1,855	51.8	938	50.3	2,194
Three	10.3	57	10.9	661	7.3	106	11.7	612	16.1	313	14.6	660
Four or more	4.0	25	3.32	205	2.4	37	3.6	193	6.6	125	4.2	208

Table 2. Difference-in-differences estimates: Effect of offering right to request flexible work on the health and well-being of mothers

	Percentage Change (95% Confidence Interval)			
Employer's offer of flexible work	**Flexible work use (% change)**	**Poor self-rated health (% change)**	**Long-term illness (% change)**	**Life Satisfaction score change (1-10)**
Any flexible work arrangement	37.28*** (32.92, 41.65)	-1.65 (-4.43, 1.12)	-1.87 (-4.30, 0.55)	0.04 (-0.08, 0.16)
Part-time work	13.66*** (10.51, 16.81)	-0.81 (-3.59, 1.97)	-1.86 (-4.30, 0.57)	0.01 (-0.01, 0.12)
Job sharing	11.98*** (10.36, 13.61)	0.63 (-1.34, 2.60)	0.20 (-1.71, 2.11)	-0.026 (-0.10, 0.06)
Flexi-time	32.41*** (29.84, 34.98)	-0.37 (-2.35, 1.61)	0.81 (-1.03, 2.66)	-0.03 (-0.11, 0.04)
Work from home	19.00*** (15.90, 22.11)	-0.15 (-2.50, 2.19)	0.22 (-2.15, 2.60)	-0.08 (-0.16, 0.01)
Special shifts	24.23*** (21.40, 27.06)	-0.41 (-2.61, 1.78)	-0.54 (-2.62, 1.55)	0.12** (0.03, 0.21)
9-day fortnights/ 4 day working weeks	7.79*** (3.34, 12.25)	2.58 (-1.65, 6.82)	2.35 (-1.78, 6.47)	0.12 (-0.04, 0.28)
School term-time contracts	12.50*** (9.75, 15.24)	0.22 (-2.40, 2.83)	0.96 (-1.63, 3.55)	0.01 (-0.09, 0.11)

95% Confidence Intervals (95% CI) in parenthesis
*** p<0.01, ** p<0.05, * p<0.1
The table presents beta coefficients and 95% Confidence Intervals for the interaction between treatment status and time multiplied by 100; they can be interpreted as the percentage change in each outcome
Estimates come from an individual fixed effect model that control for changes in marital status, occupational class and changes in partner's characteristics (work status, educational level, use of flexible work arrangements, number of siblings of child cohort member and whether work full- or part-time)

Figures

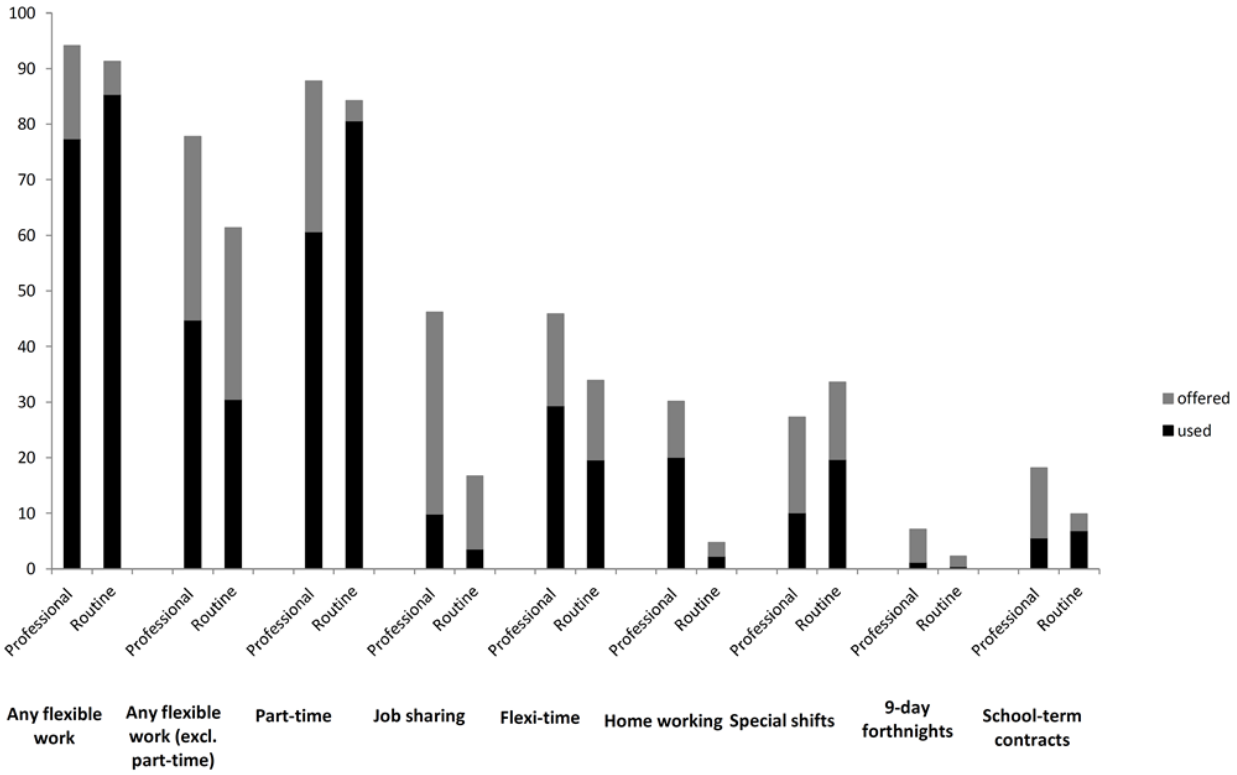

Figure 1. Employer's offer and use of flexible work arrangements by mothers according to occupational group, 2001/02

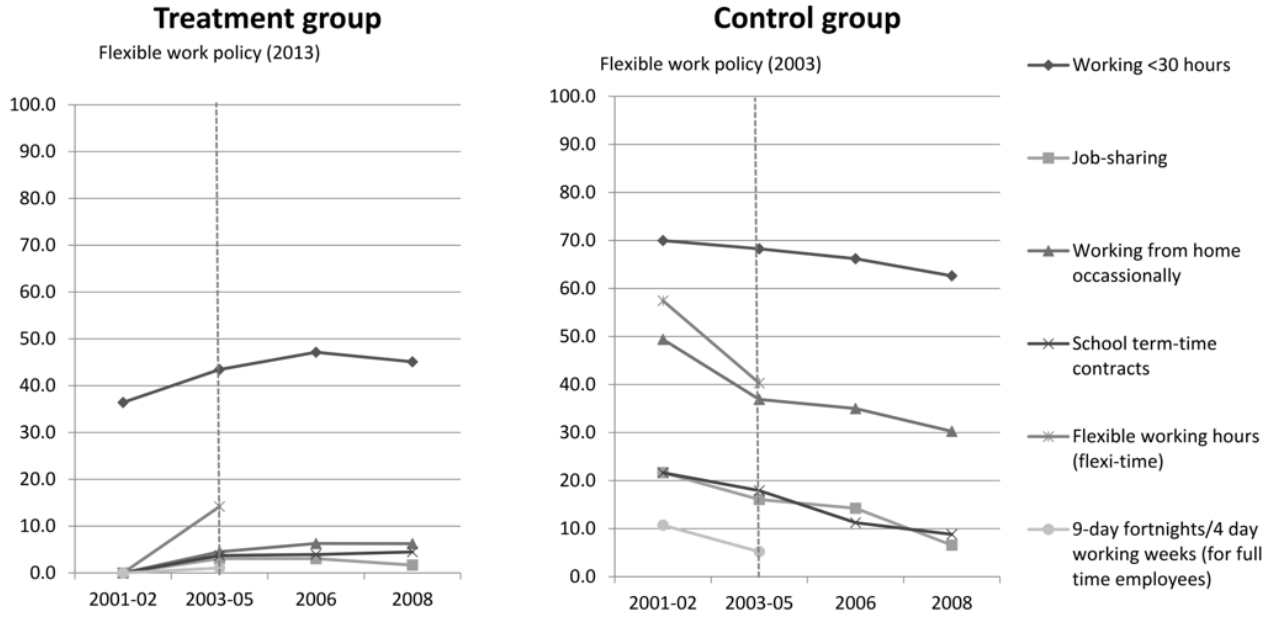

Figure 2. Use of flexible work arrangements by mothers among treatment and control groups, 2001/02-2008

Treatment group refers to mothers whose employer already offered flexible work arrangements prior to the reform (wave 1, 2001-2002), while control group comprised mothers who had no right to request flexible work prior to the reform (wave 1, 2001-2002)

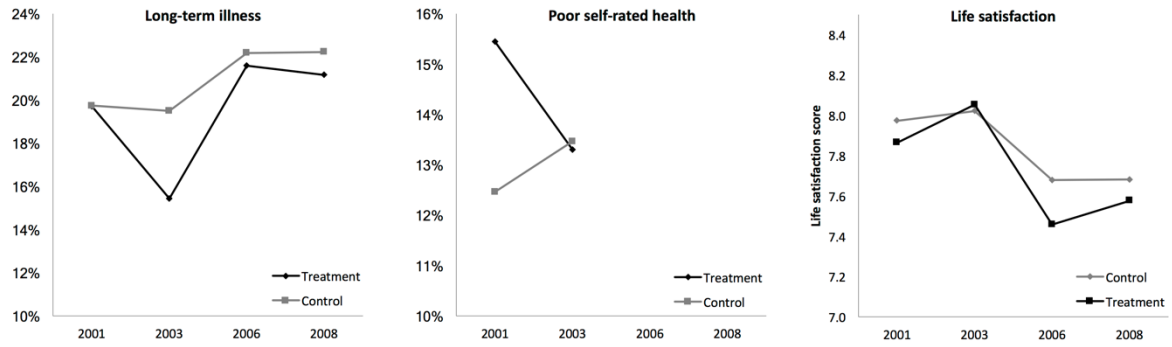

Figure 3. Measures of maternal health and life-satisfaction among treated and control groups, 2001/02-2008

Note: Data for self-rated health is only for 2001 and 2003, because measures for years 2006 and 2008 were not comparable to those in earlier years